REQUEST FOR RECONSIDERATION UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE
GROUP 2821
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Kanji KAWAKAMI , et al.

Appln. No.: 09/964,410

Confirmation No.: 2356

Filed: September 28, 2001

For: ANTENNA

Docket No: Q66456

Group Art Unit: 2821

Examiner: Michael C. WIMER

10/14/03

REQUEST FOR RECONSIDERATION UNDER 37 C.F.R. § 1.116

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Commissioner for Patents
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Sir:

In response to the Office Action dated June 3, 2003, reconsideration and allowance of the subject application are respectfully requested. Upon entry of this Request, claims 1 and 3-16 are pending in the application. Applicant respectfully submits the pending claims define patentable subject matter.

Claims 1, 3-7 and 9-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chardin (U.S. Patent No. 3,594,805). Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Chardin in view of Hadden et al. (U.S. Patent No. 5,223,851; hereafter "Hadden"). Applicant respectfully traverses the prior art rejections.

Chardin discloses a ferrite rod antenna having a longitudinally split sleeve. As shown in Figures 1-3, the antenna comprises a ferrite rod 1 surrounded by a conductive cylindrical split sleeve 2 having a longitudinal split defining a gap 3 and a slot 6 diametrically opposite the gap 3. The effect of the slot 6 is to increase the inductance of the sleeve 2. Opposing edges of the sleeve 3 at the gap 3 are capacitively connected by a plurality of capacitors C1-C4 distributed over the length of the sleeve 2. The sleeve 2 is partially surrounded by a split conductive sleeve 5 which axially slides relative to the sleeve 2 so as to vary the inductance of the sleeve 2 (and hence its resonant frequency) based on how much of the slot 6 is covered by the sleeve 5. Coupling to the antenna is obtained by leads 8 and 9 which are connected to each terminal of the capacitor C3.

Hadden discloses a method and apparatus for facilitating interconnection of antenna lead wires to an integrated circuit and encapsulating the assembly to form an improved miniature transponder device. An additional protective layer of insulation is provided to the top of an integrated circuit chip or die and enlarged plated electrodes are provided to the surface of the additional insulation to form enhanced bonding pads, such pads being electrically connected through the protective layers to the normal bonding pads of the integrated circuit device. The enhanced bonding pads are made of a soft conductive metal such that external wires to be attached thereto can be bonded to the pads using a thermal compression bonding technique.

In the Amendment filed March 19, 2003, Applicant argued that independent claim 1 would not have been rendered obvious in view of Chardin because the cited reference does not teach or suggest "a converger, including a conductor which converges a magnetic flux of an electromagnetic wave, the converger having a through hole, into which the magnetic flux is

converged, at a center portion of the conductor, and a cutout extending from a part of the through hole to an outer periphery of the conductor", as claimed. Similarly, independent claim 9 should be allowable because Chardin does not teach or suggest (1) the claimed second converger having a through hole and a cutout and (2) the claimed first converger (i.e., two convergers).

The Examiner (page 2 of the Office Action) asserts the claimed converger (conductor) reads on the conductive cylindrical sleeve 2 and the claimed converter reads on the gap 3 formed by the longitudinal split of the conductive cylindrical sleeve 2 (Figure 1 of Chardin). However, the conductive cylindrical sleeve 2 does not have any function to converge a magnetic flux. Rather, the conductive cylindrical sleeve 2 converts magnetic flux into voltage. In Figures 1-3 of Chardin, the ferrite rod 1 corresponds to the claimed converger and the conductive cylindrical sleeve 2 corresponds to the claimed converter. However, the ferrite rod 1 does not have a through hole and/or a cutout, as required by claim 1.

In the "Response to Arguments" section of the Office Action (page 3, section 4), the Examiner simply states "the magnetic flux in Chardin does converge within the through hole (the portion within the conductive sleeve), or within the ferrite 1." Thus, it appears that the Examiner is taking the position that the conductive cylindrical sleeve 2 converges magnetic flux because the conductive cylindrical sleeve 2 surrounds the ferrite rod 1 which converges magnetic flux. However, we believe that the Examiner's position is incorrect since nowhere does Chardin teach or suggest the conductive cylindrical sleeve 2 functions to converge a magnetic flux but rather converts magnetic flux into voltage. Moreover, the mere fact that the conductive cylindrical sleeve 2 surrounds the ferrite rod 1 (which is used as a magnetic substance for converging

magnetic flux) does not allow for an interpretation that the conductive cylindrical sleeve 2 converges magnetic flux or aids in the convergence of magnetic flux by the ferrite rod 1.

As discussed above, the conductive sleeve 2 of Chardin does not provide any contribution to the magnetic flux convergence. In order to converge the magnetic flux, it is necessary to establish a loop current, for example, as shown in Fig. 1 (the dashed line) of the present application. By merely placing the sleeve 2 in the magnetic field, the magnetic flux passes through the sleeve without being converged because no loop current is established in the sleeve 2 having a shape as illustrated. This is the reason why the ferrite rod 1 is disposed inside the sleeve 2.

With regards to claims 14-16, Applicant argued that the claimed invention should be allowable because Chardin does not teach or suggest a plurality of antennas are serially interconnected and each converter is operable independently from a ground potential, as claimed. Further, Chardin does not teach or suggest "a phase delay between voltages outputted from the respective converters is eliminated on the way from the converters to a point at which the output voltages are added", as recited in dependent claim 16.

In response, the Examiner (page 2, last sentence) asserts that "pluralizing the antenna elements would have been obvious to the skilled artisan, and no phase delay is deemed to occur, and therefore, it would have been obvious to the skilled artisan that the output voltages are additive." However, Applicant submits that claims 14-16 would not have been rendered obvious because that one of ordinary skill in the art would not have been motivated to modify Chardin to produce the claimed invention. In particular, to establish a *prima facie* case of obviousness

under 35 U.S.C. § 103, there must be some suggestion or motivation to modify to combine the reference teachings.[1] In the present case the Examiner has failed to provide any objective reasoning in support of his assertions regarding phase delay and additive output voltages. Further, the Examiner has failed to point out any portion of Chardin which suggests the desirability of modifying the reference's teachings.

Accordingly, Applicant respectfully submits that independent claims 1, 9 and 14, as well as dependent claims 2-8, 10-13, 15 and 16, should be allowable over Chardin, alone or in combination with Hadden, because the cited references do not teach or suggest all of the features of the claimed invention.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

[1] "To support the conclusion that the claimed invention is directed to obvious subject matter, either references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the reference." *Ex parte Clapp* 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985).

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: October 3, 2003

Attorney Docket No.: Q66456